

R E M A R K S

Reconsideration of this application, as amended, is respectfully requested.

THE SPECIFICATION

The abstract has been amended to better comply with the requirement of MPEP 608.01(b). No new matter has been added, and it is respectfully requested that the amendments to the abstract be approved and entered.

THE CLAIMS

Independent claim 1 (and corresponding method claim 15) have been amended to clarify the features of the present invention whereby the pre-reading means causes the subject image to be read by different regions of the photosensor array using different image reading sensitivities in a plurality of stages, prior to an image reading operation by the image reading means, and whereby optimal reading sensitivity extraction means for extracting an optimal image reading sensitivity suitable for the image reading operation based on a comparison of predetermined measurement amounts which relate to image patterns of the subject image read by said pre-reading means and which correspond to the different regions of the photosensor array, as supported by the disclosure

in the specification at, for example, page 21, line 11 to page 23, line 21.

In addition, claims 1-25 have each been amended to better accord with amended independent claims 1 and 15 and/or to correct various minor informalities of which the undersigned has become aware, so as to place the claims in better form for issuance in a U.S. patent.

No new matter has been added, and it is respectfully requested that the amendments to the claims be approved and entered.

THE PRIOR ART REJECTION

Claims 1, 3, 5, 15, 17 and 18 were rejected under 35 USC 102 as being anticipated by USP 6,486,915 ("Bell et al"); claims 1-9, 14-20 and 25 were provisionally rejected under 35 USC 102 as being anticipated by (allowed) co-pending Application Serial No. 09/695,624 ("the '624 application"); claims 1-5, 14-18 and 25 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as not being patentably distinct from claims 1-4, 7-12 and 16 of the '624 application; and claims 1-25 were rejected under 35 USC 101 as claiming the same invention as claims 1, 2, 7-20 and 25-33 of co-pending Application Serial No. 10/013,979 ("the '979 application"). These

rejections, however, are respectfully traversed with respect to the claims as amended hereinabove.

RE: BELL ET AL

According to the present invention as recited in amended claim 1 (and corresponding method claim 15), a photosensor system is provided which comprises: a photosensor array including a plurality of photosensors in a two-dimensional array; image reading means for reading a subject image at a predetermined reading sensitivity by the photosensor array; pre-reading means for causing the subject image to be read by different regions of the photosensor array using different image reading sensitivities in a plurality of stages, prior to an image reading operation by the image reading means; optimal reading sensitivity extraction means for extracting an optimal image reading sensitivity suitable for the image reading operation based on a comparison of predetermined measurement amounts which relate to image patterns of the subject image read by said pre-reading means and which correspond to the different regions of the photosensor array; and reading sensitivity setting means for setting the optimal image reading sensitivity to a reading sensitivity of said image reading means.

That is, according to the present invention as recited in claims 1 and 15, a sensitivity-adjusting reading operation is

performed by reading the subject image at a plurality of different image sensitivities at a plurality of different regions of the photosensor array. The data read by the different regions is analyzed to determine measurement amounts corresponding to the different reading sensitivities of the different regions. The measurement amounts are compared to extract an optimal image reading sensitivity at which the subject image can be clearly read. The sensitivity-adjusting reading operation is thus performed by requiring the analysis of data from only a selected number of regions of the photosensor array. And the processing load and time required for processing data are thereby reduced, which allows an optimal reading sensitivity to be selected in a short time period.

By contrast, Bell et al discloses determining an appropriate exposure setting for a camera by first setting an exposure setting, and then capturing an image and determining if the image is underexposed or overexposed. If the exposure of the image is not correct, the exposure setting is reset, and another image is taken. The process is repeated until an image is captured with an appropriate exposure setting.

Accordingly, it is respectfully submitted that Bell et al does not at all disclose, teach or suggest varying the image reading sensitivity across different regions of the photosensor array, and comparing measurement amounts corresponding to the

plurality of image reading sensitivities at the different regions to extract an optimal image reading sensitivity. In fact, it is respectfully submitted that Bell et al discloses a continuous adjustment process which requires sequentially capturing images and then adjusting image exposure settings, if the exposure is not correct. In addition, it is respectfully submitted that Bell et al merely discloses a constant image exposure setting for an entire image, and does not disclose, teach or suggest varying the image reading sensitivity with respect to a different regions of the subject image/photosensor array.

Therefore, it is respectfully submitted that Bell et al does not disclose, teach or suggest pre-reading means for causing the subject image to be read by different regions of the photosensor array using different image reading sensitivities in a plurality of stages, prior to an image reading operation by the image reading means; and optimal reading sensitivity extraction means for extracting an optimal image reading sensitivity suitable for the image reading operation based on a comparison of predetermined measurement amounts which relate to image patterns of the subject image read by said pre-reading means and which correspond to the different regions of the photosensor array, in the manner of the present invention as recited in amended claims 1 and 15.

Accordingly, it is respectfully submitted that the present invention as recited in amended independent claims 1 and 15, as well as claims 2-14 and 16-25 respectively depending therefrom, clearly patentably distinguishes over Bell et al, under 35 USC 102 as well as under 35 USC 103.

RE: NAKAMURA '624

On pages 8 and 9 of the Office Action, the Examiner asserts that claims 1 and 15 of the present invention are merely broader recitations of claims 1 and 9 of the '624 application.

According to claim 1 of the '624 application, a photosensor system is provided which comprises: a photosensor array constituted by two-dimensionally arraying a plurality of photosensors; image reading means for reading a subject image made up of pixels corresponding to the plurality of photosensors at a predetermined image reading sensitivity by said photosensor array; pre-reading means for reading the subject image prior to image reading operation while changing an image reading sensitivity of said photosensor array at a plurality of stages; reading sensitivity extraction means for extracting an image reading sensitivity having a maximum absolute difference value among absolute difference values between adjacent pixels in a predetermined measurement amount relating to an image pattern of

the subject image read by said pre-reading means; and reading sensitivity setting means for setting the image reading sensitivity extracted by said reading sensitivity extraction means to a reading sensitivity of said image reading means.

Thus, according to the '624 application, when the photosensor reads a subject and a background portion as a subject image, the set value of the reading sensitivity set by the reading sensitivity extraction means is not influenced by the brightness of the background portion. Since the background portion is located farther away from the photosensor than the subject, the variation of the brightness between adjacent pixels in regions of the image patterns which correspond to the background portion is smaller than the variation of brightness in the subject. Based on this difference in brightness variation, the image patterns of the subject image are read by the pre-reading means, differential absolute values of measurement amounts between adjacent pixels are compared with each other, and an image reading sensitivity having the greatest differential absolute value between adjacent pixels is extracted.

By contrast, the reading sensitivity extraction means and method according to the present invention as recited in amended claims 1 and 15 extracts an optimal image reading sensitivity suitable for the image reading operation based on a comparison of

predetermined measurement amounts which correspond to the plurality of different image reading sensitivities corresponding to different regions of the photosensor array. That is, measurement amounts at the different reading sensitivities in the different regions are compared to extract the optimal image reading sensitivity.

Thus, it is respectfully submitted that amended independent claims 1 and 15 of the present application are not obvious in view of claim 1 (and corresponding method claim 9) of the '624 application, and it is respectfully submitted that the claims of the present application patentably distinguish over claims 1 and 9 of the '624 application under the judicially created doctrine of obviousness-type double patenting.

RE: THE '979 APPLICATION

Application Serial No. 10/013,979 has been amended in an Amendment that is also being transmitted to the Patent Office today, June 25, 2004.

According to amended claim 1 (and corresponding method claim 19) of the '979 application, a photosensor system is provided which comprises: a photosensor array including a plurality of photosensors in a two-dimensional array; an image reader which reads a subject image at a predetermined reading

sensitivity by the photosensor array; sensitivity-adjusting reader which causes the subject image to be read by a specific region of the photosensor array at a plurality of different image reading sensitivities at a corresponding plurality of stages for the specific region of the photosensor array; optimal image reading sensitivity extraction means for extracting an optimal image reading sensitivity suitable for the image reading operation based on a comparison of predetermined measurement amounts which correspond to the plurality of different image reading sensitivities and which relate to an image pattern of the subject image corresponding to the specific region of the photosensor array and read by the sensitivity-adjusting reader; and reading sensitivity setting means for setting the optimal image reading sensitivity to a reading sensitivity of the image reader.

That is, according to the invention claimed in the '979 application, the sensitivity-adjusting reading means varies the image reading sensitivities in a specific region of the photosensor array. Thus, it is respectfully submitted that amended claims 1 and 19 of the '979 application do not correspond to amended claims 1 and 15 of the present invention whereby the sensitivity-adjusting reader causes the subject image to be read by different regions of the photosensor array at different image reading sensitivities.

Accordingly, it is respectfully submitted that the amended claims of the present application are patentably distinct from the amended claims of the '979 application under 35 USC 101.

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In view of the foregoing, entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

Respectfully submitted,



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